Amendments to the Claims:

The following Listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (currently amended) A microresonator device, comprising:

a first substrate having at least one self-aligning feature on a surface;

a first waveguide disposed relative to the first substrate; and

a microresonator positioned on the substrate by the self-aligning feature so as to optically couple to the first waveguide in a coupling region, the first waveguide having a larger cladding index on the coupling region side than on an opposite side.

2. (original) A device as recited in claim 1, wherein the self-aligning feature is a receiving cavity on the surface of the first substrate.

3. (original) A device as recited in claim 1, wherein the self-aligning feature is a slot on the first substrate, wherein the microresonator is positioned at a location along the slot.

4. (original) A device as recited in claim 3, wherein the first waveguide is positioned in the slot.

5. (original) A device as recited in claim 3, wherein the microresonator contacts a slot edge, the slot edge being nonparallel with the first waveguide.

6. (original) A device as recited in claim 3, wherein the microresonator contacts a slot edge, the slot edge being parallel with the first waveguide.

7. (original) A device as recited in claim 3, wherein the slot has a first edge and a second edge closer to the first waveguide than the first edge, the microresonator being aligned by the first edge of the slot and the first waveguide.

8. (original) A device as recited in claim 3, wherein the slot has a first edge and a second edge closer to the first waveguide than the first edge, the microresonator being aligned by the first edge of the slot and the second edge of the slot.

9. (original) A device as recited in claim 1, wherein the first waveguide is disposed on the substrate, the first waveguide being unsupported by the substrate at a coupling region of the waveguide.

10. (original) A device as recited in claim 1, wherein a direction of optical coupling between the first waveguide and the microresonator is parallel to the surface of the first substrate.

11. (original) A device as recited in claim 1, wherein a direction of optical coupling between the first waveguide and the microresonator is perpendicular to the surface of the first substrate.

12. (original) A device as recited in claim 1, wherein the first waveguide is an optical fiber.

13. (original) A device as recited in claim 12, wherein the optical fiber is a tapered optical fiber.

14. (original) A device as recited in claim 1, wherein the first waveguide is a planar waveguide.

15. (original) A device as recited in claim 1, wherein the first waveguide is a channel waveguide.

16. (original) A device as recited in claim 1, wherein the microresonator is microsphere.

17. (original) A device as recited in claim 1, further comprising an adhesive material disposed to hold the microresonator to the self-aligning feature.

18. (original) A device as recited in claim 1, further comprising at least one retaining member disposed to retain the microresonator at a desired location relative to the self-aligning feature.

19. (original) A device as recited in claim 1, further comprising a second substrate and a second waveguide disposed relative to the second substrate, the second waveguide being optically coupled to the microresonator.

20. (original) A device as recited in claim 1, further comprising a light source generating light, the light being coupled to the first waveguide and from the first waveguide to the microresonator.

21. (original) A device as recited in claim 20, further comprising a light detector optically coupled to detect light from the microresonator.

22. (original) A device as recited in claim 20, wherein the light detector is coupled to receive light from the microresonator via the first waveguide.

23. (original) A device as recited in claim 1, wherein the microresonator further comprises an optical gain medium.

24. (original) A device as recited in claim 1, further comprising a second waveguide disposed relative to the first substrate, the second waveguide being optically coupled to the first microresonator.

25. (original) A device as recited in claim 1, further comprising a second substrate disposed proximate the first substrate.

26. (original) A device as recited in claim 25, further comprising a second waveguide disposed relative to one of the first and second substrates, the second waveguide being optically coupled to the first microresonator.

27. (original) A device as recited in claim 26, wherein the first waveguide is attached to the first substrate and the second waveguide is attached to the second substrate.

28. (currently amended) A method of making a microresonator optical device, comprising:

providing at least one self-aligning feature on a first substrate;

providing a first waveguide; and

positioning a microresonator, using the at least one self-aligning feature, so that the microresonator is in an optically coupling relationship with the first waveguide in a coupling region, the first waveguide having a larger cladding index on the coupling region side than on an opposite side.

29. (original) A method as recited in claim 28, wherein providing the at least one self-aligning feature on the first substrate comprises forming a receiving cavity on a surface of the substrate and positioning the microresonator comprises positioning the microresonator in the cavity.

30. (original) A method as recited in claim 28, wherein providing the at least one self-aligning feature on the first substrate comprises forming a slot on a surface of the first substrate.

31. (original) A method as recited in claim 30, wherein providing the first waveguide comprises providing the first waveguide in the slot.

32. (original) A method as recited in claim 30, wherein forming the slot comprises forming a slot edge non-parallel with the first waveguide.

33. (original) A method as recited in claim 28, wherein providing the at least one self-aligning feature comprises etching the at least one self-aligning feature in a surface of the substrate.

34. (original) A method as recited in claim 28, further comprising optically coupling light between the first waveguide and the microresonator in a direction parallel to a major surface of the substrate.

35. (original) A method as recited in claim 28, further comprising optically coupling light between the first waveguide and the microresonator in a direction perpendicular to a major surface of the substrate.

36. (original) A method as recited in claim 28, further comprising adhering the microresonator to the first substrate to hold the microresonator in a fixed relationship relative to the self-aligning structure.

37. (original) A method as recited in claim 28, further comprising fixing the microresonator at a desired location relative to the self-aligning element with at least one retaining member.

38. (original) A method as recited in claim 28, further comprising providing a second substrate and a second waveguide disposed relative to the second substrate, and optically coupling light between the microresonator and the second waveguide.